REMARKS

The Official Action mailed November 5, 2002 has been received and its contents carefully noted. Filed concurrently herewith is a *Request for Two Month Extension of Time*, which extends the shortened statutory period for response to April 5, 2003. Accordingly, Applicants respectfully submit that this response is being timely filed.

Applicants note with appreciation the consideration of the Information Disclosure Statements filed on July 28, 1999; February 11, 2002; and February 15, 2002.

Claims 45-50, 52-54, 56-58, 60-62, 64, 65 and 67-72 are now pending in the present application, of which claims 45, 49, 52, 56, 60 and 64 are independent. Claim 47 has been amended to correct a typographical error. For the reasons set forth in detail below, these claims are believed to be in condition for allowance.

The Official Action rejects claims 45, 47, 60, 62 and 67-72 as obvious based on the combination of U.S. Patent No. 5,858,819 to Miyasaka and U.S. Patent No. 5,581,860 to Makita et al., and claims 46, 49, 50, 52-54, 56-58, 61 and 64-66 as obvious based on the combination of Miyasaka '819, Makita and U.S. Patent No. 6,066,516 to Miyasaka. The Applicants respectfully traverse the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2143-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab,* 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Fine*, 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. The Independent claims recite providing a material for promoting crystallization (or at least one metal element) to at least a part of a semiconductor film formed over a substrate, subjecting the semiconductor film to plasma to form a gate insulating film on the semiconductor film, and either crystallizing the semiconductor film after subjecting the semiconductor film to the oxygen plasma to obtain a crystalline semiconductor film (claims 45, 52 and 60) or irradiating the semiconductor film after subjecting the semiconductor film to the plasma with one of an infrared ray and a laser light (claims 49, 56 and 64).

It appears that Miyasaka '819 discloses that the semiconductor film is exposed to an oxygen plasma to form an oxide film on the semiconductor surface (col. 24, lines 37-56); removing the oxide film from the semiconductor film surface immediately prior to melt crystallization (col. 25, lines 24-26); and that the gate insulator layer is formed using CVD or PVE after the semiconductor film crystallization is finished (col. 27, lines 57-59). The Official Action asserts that the "silicon oxide film can be used as a gate insulating film" (p. 2, Paper No. 25). However, the Official Action is silent as to how or why the prior art teaches this feature.

It is respectfully submitted that Miyasaka '819 does not teach or suggest using the oxide film as a gate insulating film. Makita and Miyasaka '516 do not cure the deficiencies in Miyasaka '819. Makita and Miyasaka '516 are relied upon to teach introducing a metal catalyst into the film and crystallizing the semiconductor film with a laser light, respectively (pp. 2-3, Id.). The prior art, either alone or in combination, does not teach or suggest providing a material for promoting crystallization (or at least one metal element) to at least a part of a semiconductor film formed over a substrate, subjecting the semiconductor film to plasma to form a gate insulating film on the semiconductor film, and either crystallizing the semiconductor film after subjecting the semiconductor film to the oxygen plasma to obtain a crystalline semiconductor film or irradiating the semiconductor film after subjecting the semiconductor film to the plasma with one of an infrared ray and a laser light. Since Miyasaka '819, Makita and Miyasaka

'516 do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained.

Applicants note that dependent claim 48 has not been formally rejected. It is respectfully submitted that claim 48 is allowable for the reasons stated above.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number listed below.

Respectfully submitted,

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MARKED-UP VERSION OF THE AMENDED CLAIMS

47. (Amended) A method according to claim 45, wherein said semiconductor [flim] film is crystallized through one of a solid state and an intermediate state between the solid state and a liquid state.